Pak. j. life soc. Sci. (2025), 23(1): 7741-7763 E-ISSN: 2221-7630;P-ISSN: 1727-4915

Pakistan Journal of Life and Social Sciences

www.pjlss.edu.pk

https://doi.org/10.57239/PJLSS-2025-23.1.00601

RESEARCH ARTICLE

Exploring Intercultural Competence Among Saudi College Students

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ARTICLE INFO

Received: Jan 19, 2025

Accepted: Mar 14, 2025

Keywords

Intercultural Competence

Intercultural Communication

Multicultural Education

Student Assessment

Communication Skills

Internationalization

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ABSTRACT

This study explores the level of intercultural competence among Saudi college students in Tabuk, a region in northwestern Saudi Arabia undergoing rapid development and demographic transformation.Given the anticipated influx of international talent in Tabuk's emerging mega-projects, concerns have arisen about the local workforce's readiness to thrive in multicultural and multiethnic environments. Due to the pivotal role of intercultural competence in the effectiveness and success of interactions in such settings, this study collected self-reported evaluations of intercultural competence from students and graduates (n=1935) at the University of Tabuk. Exploratory factor analysis (EFA) confirmed a six-factor structure—tolerance of ambiguity, behavioral flexibility, communicative awareness, knowledge discovery, respect for otherness, and empathy—in line with established theoretical frameworks (Byram, 1997, 2009;Kühlmann& Stahl, 1998).Robust statistical analyses confirm the strong reliability and validity of the assessment scales.Descriptive statistics revealed that most participants self-assessed their intercultural competence as moderate to advanced, with behavioral flexibility and respect for otherness emerging as particularly strong dimensions. Comparative analyses indicated that bi-/multilingual students, those with travel experience, and students with international friendships reported significantly higher overall intercultural competence levels, while differences based on gender and nationality were minimal. These findings suggest that intercultural competence in this context is largely driven by direct cultural exposure rather than inherent demographic characteristics.The study's results have important implications for Saudi higher education and workforce development.

INTRODUCTION

Globalization is increasingly influencing the world, impacting both personal and professional aspects of life. Now, more than any other past times, people are able to explore and interact with diverse cultures from the comfort of their homes and local communities. However, the influx of cultural diversity presents challenges, particularly when the goal is to leverage this global phenomenon to foster more harmonious, tolerant, and mutually respectful communities. Uncritical consumption of intercultural knowledge and a limited understanding of cultural patterns can lead to negative consequences for both individuals and society as manifested in stereotyping and misunderstanding.

This issue has been a focal point for intercultural scholars and researchers for years, leading to a wealth of studies on intercultural competence across various populations and contexts (cf. Sinicrope, Norris, & Watanabe, 2007). These studies have enhanced our understanding of intercultural competence, its components, and influencing factors.

Intercultural competence is especially crucial in countries with emerging economies, where the workforce must quickly adapt to culturally diverse work environments. A case in point, Saudi Arabia is experiencing significant economic changes that are attracting international investors, workers, and tourists. This shift raises questions about the local workforce's readiness to meet the standards and demands of international workplaces. This, in turn, places increasing pressure on Saudi universities to align their academic programs with global standards and to equip their graduates with soft skills, including intercultural competence, essential for success in today's global workforce. Yet, despite the recognized importance of intercultural competence, Saudi universities have not fully integrated this skill into their curricula.

This study addresses the dearth of research on intercultural competence among Saudi college students. It aims to assess their level of intercultural competence as a preliminary step towards informing future research and initiatives that seek to develop this critical competency.

LITERATURE REVIEW

Intercultural competence (IC)

Intercultural competence is a complex, multidimensional construct that has garnered the attention of numerous scholars and researchers over the past decades. This interest is driven by the increasing demand for successful communication across an ever-globalized and interconnected world. Several IC conceptualizations are proffered in the literature as a reflection of different perspectives; however, considerable overlap exists between the different conceptualizations and their purported components (cf. Spitzberg& Changnon, 2009). General scholarly consensus views intercultural competence as the appropriate and effective communication between individuals of different cultural backgrounds (Arasaratnam, 2006; Deardorff, 2006; Spitzberg, 2000). Appropriate communication avoids significant violations of the "valued rules, norms, and expectancies of the relationship," while effective communication achieves "valued goals or rewards relative to costs and alternatives" (Spitzberg, 2000, p. 380).

The literature specifies several components of intercultural competence, but common threads can be identified. These components of intercultural competence tend to fall under one of three categories: affect/attitude, knowledge/cognition, and skills/behaviors (Deardorff, 2006; Fantini, 2000). Spitzberg and Changnon (2009) identified 325 conceptual components of IC in the literature. However, a handful of components received more attention than others, as evident by their emergence across many research studies. These components include communication skills, cultural awareness, empathy and respect for differences, adaptability and flexibility, and intercultural sensitivity.

IC Assessment

The assessment of intercultural competence is crucial for educational institutions and employers to effectively prepare their graduates and employees for success in diverse, multicultural, and multiethnic environments (Cushner & Brislin, 2012; Sercu, 2004). A reliable and valid assessment is essential for accurate program placement and effective pedagogical interventions (Matsumoto & Hwang, 2013). However, the multifaceted nature of intercultural competence (IC) and its susceptibility to numerous mediating factors make it a challenging construct to assess accurately. Additionally, there are concerns about the validity of existing assessment practices and the cross-cultural generalizability of IC findings (Punti& Dingel, 2021; Spitzberg& Changnon, 2009). Therefore,

there is a consensus among scholars that a more comprehensive and valid assessment of IC requires multiple methods, including observations, self- and other-evaluations, case studies, and interviews (Deardorff, 2006).

The field of intercultural competence (IC) assessment is replete with quantitative survey-based tools, developed in response to the demand for scalable assessments and the preference for quantitative data to enable comparative analysis over time and across different groups. Prominent IC scales include the Intercultural Development Inventory (IDI) (Hammer et al., 2003), Intercultural Sensitivity Scale (ISS) (Chen & Starosta, 2000), Assessment of Intercultural Competence (AIC) (Fantini, 2007), Intercultural Sensitivity Inventory (ICSI) (Bhawuk& Brislin, 1992), Cultural Intelligence Scale (CQS) (Ang et al., 2007), and Sociocultural Adaptation Scale (SCAS) (Searle & Ward, 1990) (cf. Richter et al., 2023 for a comprehensive review). These tools reflect a variety of IC frameworks and cater to a broad spectrum of populations. Drawing on the classification by Spitzberg and Changnon (2009), these instruments encompass various IC models: developmental models like the IDI track progression from ethnocentrism to ethnorelativism through six stages; compositional models like the ISS view IC as the sum of distinct components; co-orientational models like the AIC and ICSI prioritize mutual understanding and shared meaning between cultures; causal process models like the CQS delineate a process where components interact to yield desired outcomes; and adaptational models like the SCAS focus on the individual's adjustment in behavior and communication during cultural interactions. However, as Spitzberg and Changnon (2009) caution, these subjective models are not mutually exclusive and can be complemented by equally plausible alternative classifications. This classification aids in understanding the theoretical foundations of IC assessment tools and guides the informed selection of assessments to meet specific goals.

IC Development and Mediating Factors

Recent research highlights the significant influence of various situational factors on the development of intercultural competence (IC). Notably, studies have demonstrated that experiences abroad contribute substantially to IC development, especially when coupled with on-site interventions or cultural immersion (Bagwe&Haskollar, 2020; Lokkesmoe et al., 2016; Vande Berg et al., 2009; de Waal et al., 2020; Wilson et al., 2013). Moreover, intercultural encounters, whether they take place domestically or internationally, have been shown to bolster intercultural competence (El Ganzoury, 2012; Steuernagel, 2014). Additionally, a positive relationship has been established between the duration of intercultural experiences and the enhancement of IC (Castles, 2012; Palsa, 2010). Furthermore, foreign language proficiency has been identified as a pivotal element in the cultivation of intercultural competence, underscoring its essential role in IC development (Basow& Gaugler, 2017; Swami et al., 2010).

The impact of personal and demographic variables on intercultural competence remains ambiguous, with varying and sometimes conflicting findings (Bagwe&Haskollar, 2020). Research reveals a complex and nuanced relationship between sex and intercultural competence, challenging previous assumptions and indicating mixed outcomes (Genç, 2018; Haskollar&Bagwe, 2022). Race/ethnicity, however, emerges as a significant influence, with minority groups often exhibiting heightened levels of intercultural competence (Kruse et al., 2014). Age also plays a role, with older individuals generally demonstrating higher levels of intercultural competence (Herrera Granda et al., 2023). Academic disciplines influence intercultural development as well; a study by Vande Berg et al. (2009) showed that students majoring in social sciences and foreign languages, particularly those participating in study abroad programs, achieved notable gains in intercultural competence compared to peers from other fields. Contrary to expectations, Lantz-Deaton (2017) discovered no direct correlation between intercultural friendships and an increase in intercultural competence. However, Schwarzenthaletal et al. (2019) highlighted that such friendships can foster intercultural competence if they involve active perception and discussion of cultural variations. Finally, Gonçalves Matos (2005) suggested

that intercultural reading can enhance intercultural competence by fostering awareness of cultural differences and exposing individuals to new cultural perspectives.

Intercultural Competence in Saudi Arabia

A number of studies have utilized self-evaluation surveys to quantitatively assess intercultural competence levels among Saudis, predominantly focusing on individuals in the healthcare sector. This focus is attributed to the heightened cultural diversity encountered in Saudi healthcare settings, as opposed to other settings where intercultural interaction is perceived to be minimal. Alharbi et al. (2021)conducted an assessment of intercultural competence among nurses in Saudi Arabia, uncovering moderate to high competence levels. However, the IC levels of Saudi nurses were generally found to be lower than those of their non-Saudi counterparts, with significant disparities observed specifically in cultural awareness and sensitivity. Atwa and Abdel Nasser (2016) found that physicians in Saudi Arabia moderately rated their intercultural competence with statistically significant variation mediated by several factors including age, rank, and length of work experience.

In Saudi higher education, few studies have delved into intercultural competence. Havril (2018) investigated the intercultural competence levels of female university students in Saudi Arabia, revealing a pronounced eagerness among the students to engage with foreign cultures and enhance their intercultural communication skills. However, while this study discussed various facets of intercultural competence, it did not provide a statistical analysis of the students' overall intercultural competence nor did it explore the impact of demographic and personal factors. Cruz et al. (2017) and Halabi and de Beer (2018) undertook studies examining cultural competence among nursing students in Saudi Arabia. Both found a fairly moderate level of intercultural competence among nursing students in Saudi Arabia with some variations mediated by demographic and situational factors. Similar findings were echoed in Abumelha (2023) with Saudi first year English major students.

These investigations are among the limited studies that have quantitatively assessed intercultural competence among college students in Saudi Arabia. There remains a need for more comprehensive research to determine the intercultural competence levels across diverse student demographics in Saudi Arabia, particularly in the rapidly industrializing and globalizing Tabuk region.

The present study

The present study responds to the call for "systematically [testing] the validity and cross-cultural generality of the models" of intercultural competence (Spitzberg& Changnon, 2009, p. 45). For this purpose, the study developed and validated an intercultural assessment scale to address the following questions:

What are the levels of intercultural competence (IC) and its dimensions among Saudi college students?

How do different demographic and personal factors affect the levels of IC and its dimensions among Saudi college students?

For the second research question, the following hypotheses were investigated:

H1: Participants with international friends will score significantly higher in IC compared to participants without international friends.

H2: Participants speaking more than one language will score significantly higher in IC compared to participants who speak only one language.

H3: Participants with travel abroad experience will score significantly higher in IC compared to participants without such experience.

H4:Female students will score significantly higher in IC compared to male students.

H5:International students will score significantly higher in IC compared to Saudi participants.

METHODS

This study develops and validates a scale for the quantitative assessment of intercultural competence among Saudi college students. The scale's clarity, relevance, and cultural appropriateness were evaluated by an expert panel and a group of representative college students. Following this, the instrument was administered, and the collected data underwent multiple statistical analyses to confirm the reliability and validity of the data and to address the research questions.

Participants

Convenience sampling was employed to recruit participants for this study. A total of 1,935 students and graduates from the University of Tabuk participated (223 males, 1,713 females), with ages ranging from 18 to 44 years (Mean = 22, Standard Deviation = 3). This was after excluding 11 participants identified as outliers using interquartile range analysis and 3 participants due to missing data, withdrawal from the university, or enrollment at another university. The majority of participants were Saudi citizens (n = 1,895), with 40 participants representing international students. Participants were invited to join the study by enrolling in a voluntary online summer course on intercultural competence (IC). An ethics review was not required for this study by the university where it was conducted.

Research Instruments

Three instruments were used in this study: a personal and demographic information survey, a self-report scale, and a situational judgment test.

The Personal and Demographic Information Survey

The survey collected pertinent personal and demographic details from participants. The data gathered included sex, age, nationality, proficiency in foreign languages, academic major, work experience, experience traveling abroad, and experience with intercultural contact.

Intercultural Competence Assessment Scales

This study utilized the European Commission-funded Intercultural Competence Assessment (INCA) framework for assessing intercultural competence (INCA, 2004, 2007). The INCA framework draws on the foundational works on intercultural competence (IC) by Byram (1997, 2009) and Kühlmann and Stahl (1998). The framework incorporates specific, multi-level descriptors across three fundamental dimensions: knowledge, skills, and attitudes. These dimensions encompass six competence types: knowledge discovery, empathy, behavioral flexibility, communicative awareness, respect for otherness, and tolerance of ambiguity, each evaluated at basic, intermediate, and full levels. INCA employs a combination of qualitative and quantitative methods to assess intercultural competence, including a self-report scale, a situational judgment test, and intercultural role-playing activities.

The INCA framework was selected for this study because it offers standardized descriptors for intercultural competence applicable across various populations and contexts, thereby facilitating cross-cultural comparisons. Moreover, the framework incorporates structured and validated mixed-method approaches for assessing intercultural competence, aligning with scholarly consensus on the importance of integrating multiple methods for evaluating this multidimensional construct. However, the framework has not yet been validated for the Saudi population, suggesting its potential applicability pending such validation. This study specifically employed two INCA instruments: the self-report scale and the situational judgment test. The intercultural role-playing activities were

excluded because they are not scalable for the study's intended large-scale application. Due to space constraints in this paper, the results of the situational judgment test and their alignment with the results of the self-report scale will be presented and discussed in a subsequent paper.

Development and Validation of the Scales

This study developed the items for the selected scales using the INCA descriptors of dimensions and levels of intercultural competence, rather than directly utilizing existing items from the INCA framework. This decision was driven by two main considerations. Firstly, certain items within the INCA scale assess multiple dimensions at once, potentially leading to overlapping results in assessments. Secondly, the study sought to create items that were specifically tailored to the context of college students and presented in their first language (Arabic), ensuring greater relevance and meaning for the participants. The final version of the scale consisted of 18 Likert-type scales with 5-point responses ranging from 1 (strongly disagree) to 5 (strongly agree) (see Appendix A for scale items). This scale underwent content validation to ensure its clarity, relevance, and cultural appropriateness for the target population, namely Saudi college students. The content validation procedure involved content review by a panel of experts (n = 4) and subsequent analysis using the item-level content validity index (I-CVI), average scale-level content validity index (S-CVI/Ave), and universal agreement (S-CVI/UA).

Statistical analyses

Non-parametric statistical analyses were employed in this study in order to account for the non-normally distributed and ordinal nature of the Likert-scale data. (Kolmogorov-Smirnov normality test: $D(1935) = 0.055$, $p = 0.0$). Spearman's correlation coefficients as shown in Appendix Bshowed that individual IC subscales had an overall strong correlation with the overall IC scale indicating that the variables are measuring aspects of the same underlying construct (Field, 2009). An overall moderate correlation also existed among individual IC competences. These correlation results in addition to the determinant value of 0.002573 indicated that the data did not have multicollinearity or singularity issues and was therefore suitable for factor analysis.

The construct and structural validity of the scale were assessed through a split-half dataset sequential procedure, integrating Exploratory Factor Analysis (EFA) with Confirmatory Factor Analysis (CFA), following Gerbing and Hamilton's (1996) methodology. This methodology involves randomly dividing a dataset into two equal parts: the first half is subjected to EFA to identify potential underlying factors, while the second half is utilized for CFA to verify the factor structure discovered. However, to account for potential variability among the class of different randomized data subsets and to counter the potential selection bias inherent in selecting a randomized data subset with a preferred factor structure, an expanded version of this methodology was utilized. This included the analysis of a substantial number of randomized split-half dataset pairs, providing a more thorough and comprehensive examination of the factor structure and goodness-of-fit indices.

First, to address potential selection bias from deliberately choosing a randomized data subset with a preferred factor structure, an expanded item-elimination procedure was utilized. This procedure involved analyzing item loading stability across the first halves of 1,000 randomized half-split dataset pairs, using a custom developed R script. The script assessed the stability of each item's ability to exhibit significant loadings (≥0.3) (Güvendir& Ozkan, 2022; Pett, Lackey, & Sullivan, 2003) that align with the anticipated factor structure model across different data subsets. An item was considered to exhibit loading patterns consistent with the hypothesized factor structure model if it met two criteria: (a) it loaded significantly on only one factor and (b) it did so along with at least one other item from its expected factor group. The instability rate for an item was determined by the ratio of inconsistent loadings to the total number of data subsets examined. Items with the highest instability rates were sequentially removed through multiple rounds until all remaining items showed less than

30% instability rate in their loadings. Next, the goodness-of-fit indices for the extracted factor structure model were evaluated across the second halves of the 1,000 randomized half-split dataset pairs. The CFA employed for assessing the goodness-of-fit indices utilized the Weighted Least Squares Mean and Variance Adjusted (WLSMV) estimator, suitable for ordinal data where the assumption of normality does not hold.

The EFA and CFA were conducted using the *psych* package (version 2.4.1) (Revelle, 2024) and the *lavaan* package (version 0.6.17) (Rosseel, 2012) in R, respectively. The internal consistency of the final version of the scale was evaluated using composite reliability and Spearman-Brown split-half reliability. Utilizing the *reliabilityL2* function from the *semTools* package (version 0.5.6) (Jorgensen et al., 2024) in *R*, both within-factor (omegaL1) and between-factor (omegaL2) composite reliability coefficients were calculated, alongside the partial within-factor reliability coefficients (partialOmegaL1). Furthermore, the *reliability* function from the same *R* package was used to calculate the composite reliability of individual factors through ordinal alpha coefficients, considering the ordinal nature of the data.

The Mann-Whitney U test was employed to assess the significance of group differences using factor scores derived from the exploratory factor analysis (EFA) of the complete dataset, based on the 6-factor, 14-item model identified in earlier analyses. The effect size was quantified using the rank-biserial correlation (Cureton, 1956). The factor scores displayed no issues of indeterminacy and were considered appropriate for subsequent statistical analyses, as indicated by the R2 values of the factor scores, which exceeded 0.90.

RESULTS

Exploratory factor analysis

The dataset's suitability for factor analysis was confirmed through Bartlett's test of sphericity (χ^2(df) = 9710.104 (18), $p < 0.001$) and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (KMO = 0.914) (Biggs &Madnani, 2022). Guided by parallel analysis (Horn, 1965), the EFA identified a six-factor structure employing principal axis factoring and oblique *promax* rotation with Kaiser normalization on a polychoric correlation matrix. The iterative process of eliminating items with high loading instability led to the removal of four items after five rounds, as detailed in Table 1. The final factor structure contains six factors with a minimum of two items in each. This structure aligns with the initial conceptualization of the intercultural competence construct.

The EFA confirmed the consistency of the extracted factors with the underlying theoretical structure as established in the literature. It identified six factors that aligned with Byram's (1997, 2009) conceptualization of IC dimensions: tolerance of ambiguity, behavior flexibility, communicative awareness, knowledge discovery, respect for otherness, and empathy. The EFA solution explained an acceptable cumulative variance of 50.7% and cumulative proportion of 88.1% (Streiner, 1994) (see Table 2). The solution also showed that the six obtained factors had comparable contribution to the total variance, highlighting the comparable importance of the six hypothesized dimensions of IC.

Table 1: Item Loading Stability and Elimination Rounds.

	Instability Rate				
Item\Round	1	2	3	4	5
TA1	53.1	30.3	34.2	23	12.4
TA2	3.1	2.9	2	1.9	1.6

TA3	5.9	13	9.3	14	9.4
BF1*	75.5	68.4			
BF2	1.8	3.3	2.3	1.6	4.2
BF3	6.3	15.9	7.9	4.7	16.3
CA1*	35.3	52.6	48.8	50.8	
CA2	22.5	9	11.9	13.5	5.3
CA3	30.2	18	17.5	18.6	6.3
KD1*	73.8	61.5	62.9		
KD2	3.8	1.9	2.7	0.3	0.3
KD3	7.3	6.3	14.4	1.7	1.2
RO1	0.5	0.2	0.4	0.6	0.2
RO2	1.3	1.8	4.5	2.9	0.8
RO3*	92.1				
E1	0.6	0.3	0.2	0.1	0
E2	3.7	0.6	0.3	0.1	0.3
E3	61	28.7	28.4	14.5	12.2
* removed					

Table 2. Average Factor loadings and Metrics.

	Factor Loadings					
Items	**Tolerance of Ambiguity**	**Behavioral Flexibility**	**Communicative Awareness**	**Knowledge Discovery**	**Respect for Otherness**	**Empathy**
TA1	.509 SD=.085, CI [.499-.52]					
TA2	.731 SD=.077, CI [.722-.741]					
TA3	.478 SD=.079, CI [.468-.488]					
BF2		.715 SD=.166, CI [.694-.736]				

BF3		.741 SD=.151, CI [.722-.759]				
CA2			.762 SD=.149, CI [.743-.78]			
CA3			.641 SD=.172, CI [.62-.663]			
KD2				.602 SD=.086, CI [.591-.613]		
KD3				.736 SD=.124, CI [.72-.751]		
RO1					.815 SD=.142, CI [.797-.833]	
RO2					.824 SD=.134, CI [.807-.841]	
E1						.724 SD=.096, CI [.712-.736]
E2						.855 SD=.111, CI [.841-.869]
E3						.402 SD=.065, CI [0.394-0.41]
Factors	**Eigenvalues**	**SS Loadings**	**Total Variance**	**Cumulative Variance**	**Proportion Explained**	**Cumulative Proportion**
E	4.440 SD=1.932, CI[4.197, 4.683]	1.607 SD=.104, CI[1.594, 1.620]	.115 SD=.007, CI[.114, .116]	.144 SD=.057, CI[.137, .151]	.200 SD=.012, CI[.198, .201]	.251 SD=.098, CI[.239, .263]
RO	1.679 SD=1.835, CI[1.448, 1.910]	1.514 SD=.078, CI[1.504, 1.524]	.108 SD=.006, CI[.107, .109]	.218 SD=.064, CI[.210, .226]	.188 SD=.009, CI[.187, .189]	.379 SD=.111, CI[.365, .393]
BF	.700 SD=.766, CI[.604, .797]	1.364 SD=.116, CI[1.349, 1.379]	.097 SD=.008, CI[.096, .098]	.346 SD=.086, CI[.336, .357]	.169 SD=.013, CI[.168, .171]	.603 SD=.151, CI[.584, .622]

KD	.448 SD=.343, CI[.405, .491]	1.212 SD=.107, CI[1.199, 1.226]	.087 SD=.008, CI[.086, .088]	.465 SD=.088, CI[.454, .476]	.151 SD=.013, CI[.149, .152]	.809 SD=.153, CI[.790, .828]
CA	.417 SD=.135, CI[.400, .434]	1.196 SD=.125, CI[1.180, 1.212]	.085 SD=.009, CI[.084, .087]	.468 SD=.098, CI[.456, .480]	.14 SD=.016, CI[.147, .151]	.813 SD=.167, CI[.792, .834]
TA	.368 SD=.101, CI[.356, .381]	1.159 SD=.092, CI[1.148, 1.171]	.083 SD=.007, CI[.082, .084]	.507 SD=.072, CI[.498, .516]	.144 SD=.011, CI[.143, .145]	.881 SD=.123, CI[.866, .897]

Confirmatory factor analysis

Both first-order and second-order goodness-of-fit indices for the final factor structure model were evaluated using the second halves of the 1,000 randomly split dataset pairs. Table 3 presents the statistics for various fit indices, including normed chi-square, comparative fit index (CFI), Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). According to Hu and Bentler's (1999) criteria for satisfactory model fit thresholds, these indices indicate an acceptable model fit. The robust RMSEA shows an acceptable fit with a first-order average of 0.07 (SD=.005, 95% CI: .06-.08) and a second-order average of 0.073 (SD=.005, 95% CI: .064-.082), both below the threshold of 0.08. Similarly, the robust CFI and TLI for both first-order and second-order CFAs exceed the acceptability benchmark of 0.90. The SRMR values for first-order and second-order, averaging at 0.04 (SD=.003, 95% CI: .035-.045) and 0.047 (SD=.003, 95% CI: .042-.053) respectively, are well below the maximum acceptable threshold of 0.08, further confirming a good fit. The normed scaled chi-square, adjusting the chi-square value for sample size and non-normality, has means of 4.466 (SD=.524, 95% CI: 3.54-5.556) for first-order CFA and 4.919 (SD=.548, 95% CI: 3.904-6.102) for second-order CFA. These values are beneath the maximum acceptable threshold of 5, as recommended by Schumacker and Lomax (2004), with the standard deviation reflecting moderate variability across datasets. Path diagrams obtained from first-order and second-order CFAs are shown in Figure 1.

Table 3: Fit Indices of First-Order and Second-Order Confirmatory Factor Analysis across the Second Halves of 1,000 Randomly Split Dataset Pairs.

Index	**Type**	**First Order CFA**			**Second Order CFA**		
		M	SD	95% CI	M	SD	95% CI
Chi-square [a] (< 5)	Standard Scaled Normed Normed Scaled	167.1 276.9 2.695 4.466	20.87 32.49 0.337 0.524	[130.6 - 210.7] [219.5 - 344.4] [2.106 - 3.399] [3.540 - 5.556]	236.2 349.3 3.327 4.919	28.46 38.93 0.401 0.548	[185.7 - 299.1] [277.2 - 433.2] [2.615 - 4.212] [3.904 - 6.102]
CFI (> 0.90)	Standard Scaled Robust	0.994 0.978	0.001 0.004 0.008	[0.991 - 0.996] [0.971 - 0.984] [0.930 - 0.960]	0.991 0.971 0.933	0.002 0.004 0.009	[0.987 - 0.994] [0.962 - 0.979] [0.916 - 0.948]

		0.946					
TLI (> 0.90)	Standard Scaled Robust	0.991 0.967 0.920	0.002 0.005 0.011	[0.987 - 0.995] [0.957 - 0.977] [0.898 - 0.941]	0.988 0.963 0.914	0.002 0.005 0.011	[0.983 - 0.992] [0.951 - 0.973] [0.893 - 0.934]
RMSEA (< 0.08)	Standard Scaled Robust	0.042 0.060 0.070	0.004 0.005 0.005	[0.034 - 0.050] [0.051 - 0.069] [0.060 - 0.080]	0.049 0.064 0.073	0.004 0.004 0.005	[0.041 - 0.058] [0.055 - 0.073] [0.064 - 0.082]
SRMR (< 0.08)		0.040	0.003	[0.035 - 0.045]	0.047	0.003	[0.042 - 0.053]
[a]Model does not fit based on p < 0.05; however, the Chi-square test is sensitive to sample size and other factors. Therefore, normed Chi-square and other fit indices are considered.							

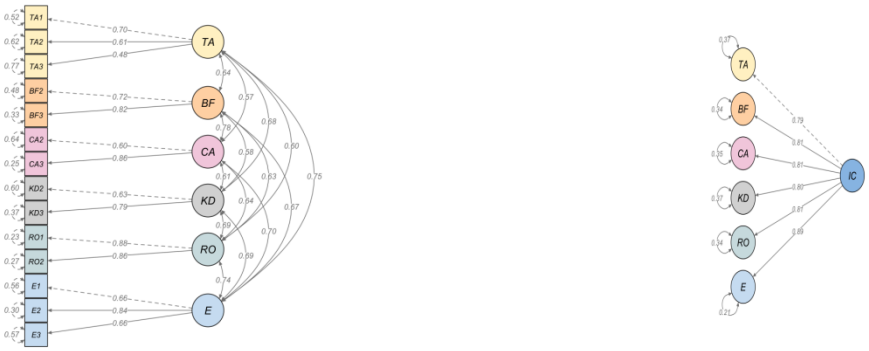

Figure 1. Path diagram obtained from first-order and second-order CFAs.

Scale Reliability

The within-factor reliability coefficient (ρc = .851) indicated a good level of consistency in item responses within the same factor and suggests that the scale items reliably measure individual variations across participants within each factor. Moreover, both between-factor reliability coefficient (ρc = .922) and partial within-factor reliability coefficient (ρc = .913), which adjusts for the nesting factor structure and accounts for between-factor influences, demonstrated the scale's effectiveness in distinguishing between different factors in the model.

Analysis of composite reliability of individual factors yielded the following results: tolerance of ambiguity (TA) α=0.614, behavior flexibility (BF) α=0.740, communicative awareness (CA) α=0.682, knowledge discovery (KD) α=0.667, respect for otherness (RO) α=0.859, and empathy (E) α=0.755.

These values indicate varying levels of internal consistency among the factors, with empathy, behavior flexibility and respect for otherness demonstrating excellent to good reliability, whereas communicative awareness, knowledge discovery and tolerance of ambiguity displayed lower yet acceptable reliability, given the low number of items in these subscales (Bacon et al., 1995; Kline, 1999; Field, 2009).

Finally, the average Spearman-Brown split-half reliability of the scale was calculated using *splitHalf* function from the *psych* package (version 2.4.1) (Revelle, 2024) in R. This yielded an average coefficient of 0.84, further corroborating the internal consistency of the scale in measuring the underlying construct.

Descriptive statistics

As shown in Figure 2, the self-evaluation results highlight the varying levels of intercultural competence among participants, both overall and in its dimensions. The overall intercultural competence results show that the majority of participants perceive their competence as either moderate (41.8%) or advanced (39.2%), with a smaller portion rating themselves as basic (19.0%). This suggests a generally high level of self-assessed intercultural competence among the participants. Participants show a balanced distribution across all levels of tolerance of ambiguity, with the highest percentage in the moderate category (39.2%). A significant majority (62.0%) of participants rated themselves as advanced in behavioral flexibility, while 32.7% and 5.4% rated themselves as moderate and basic, respectively. Likewise, nearly half of the participants (46.5%) consider their communicative awareness to be advanced, with 43.5% and 10.0% rating themselves as moderate and basic. For knowledge discovery and empathy, most participants rated their competence as moderate: 43.2% and 45.4%, respectively. A moderate level (43.2%) is the most common rating for knowledge discovery. Finally, respect for otherness ratings leaned towards moderate (46.5%) to advanced levels (41.5%).

Significance statistics

Intercultural competence levels varied across groups (see Table 4). Bi-/multilingual participants, those with travel experience, and those with intercultural friendships showed statistically significant differences in overall intercultural competence and its dimensions compared to monolingual participants, those without travel experience, and those without intercultural friends, although the effect sizes were small (≥ 0.10). These results support the first three hypotheses (H1, H2, and H3). Differences based on sex, nationality, and work experience had mixed effects on intercultural competence. Male and female participants differed significantly, with a small effect, only in the knowledge discovery dimension, which does not lend support to H4. Non-Saudi participants exhibited a small, statistically significant difference from Saudi participants in the behavioral flexibility dimension, which only lends strong support to H5. Lastly, participants with work experience showed significant, small-effect differences across four dimensions: tolerance of ambiguity, behavioral flexibility, communication awareness, and knowledge discovery.

Table 4. Characteristics of participants on their IC scores.

Group				**Intercultural Competence Score**						
	n	**%**		**TA**	**BF**	**CA**	**KD**	**RO**	**E**	**Total**
Sex										
Female	1712	88.5	*Mean ± SD*	11.48 ± 1.96	9.10 ± 1.05 9 (8–10)	8.69 ± 1.19 9 (8–10)	7.87 ± 1.50 8 (7–9)	8.55 ± 1.27 8 (8–10)	12.38 ± 1.78	58.07 ± 6.13

Group				**Intercultural Competence Score**						
	n	**%**		**TA**	**BF**	**CA**	**KD**	**RO**	**E**	**Total**
			Median (Q1–Q3)	12 (10–13)					12 (11–14)	58 (54–63)
Male	223	11.5	*Mean ± SD*	11.76 ± 2.00	9.25 ± 0.91	8.69 ± 1.27	8.20 ± 1.38	8.70 ± 1.25	12.19 ± 2.04	58.79 ± 6.39
			Median (Q1–Q3)	12 (10–13)	10 (9–10)	9 (8–10)	8 (7–9)	9 (8–10)	12 (11–14)	59 (55–64)
			Mann-Whitney U	***p* = .041 ***	*p* = .184	*p* = .579	***p* = .002 ***	*p* = .068	*p* = .760	*p* = .129
			Rank Biserial	*r* = -.08	*r* = -.05	*r* = -.02	***r* = -.13 ****	*r* = -.08	*r* = .01	*r* = -.06
Nationality										
Non-Saudi	1895	97.9	*Mean ± SD*	11.65 ± 1.90	9.62 ± 0.67	8.65 ± 1.31	7.95 ± 1.50	8.82 ± 1.11	12.30 ± 2.17	59.00 ± 5.76
			Median (Q1–Q3)	12 (10–13)	10 (9–10)	9 (8–10)	8 (7–9)	9 (8–10)	12 (11–14)	59 (55–62)
Saudi	40	2.07	*Mean ± SD*	11.51 ± 1.97	9.10 ± 1.04	8.69 ± 1.20	7.91 ± 1.49	8.56 ± 1.27	12.36 ± 1.81	58.14 ± 6.18
			Median (Q1–Q3)	12 (10–13)	9 (8–10)	9 (8–10)	8 (7–9)	8 (8–10)	12 (11–14)	58 (54–63)
			Mann-Whitney U	*p* = .630	***p* = .029 ***	*p* = .256	*p* = .819	*p* = .243	*p* = .432	*p* = .263
			Rank Biserial	*r* = .04	***r* = .20 ****	***r* = .10 ****	*r* = .02	***r* = .11 ****	*r* = .07	***r* = .10 ****
Intercultural Friendship										
Yes	713	36.8	*Mean ± SD*	11.89 ± 1.92	9.23 ± 1.03	8.82 ± 1.17	8.11 ± 1.41	8.68 ± 1.26	12.54 ± 1.79	59.28 ± 5.93
			Median (Q1–Q3)	12 (11–13)	10 (9–10)	9 (8–10)	8 (7–9)	9 (8–10)	12 (11–14)	59 (55–64)
No	1222	63.2	*Mean ± SD*	11.30 ± 1.96	9.05 ± 1.03	8.61 ± 1.21	7.79 ± 1.52	8.50 ± 1.27	12.25 ± 1.82	57.50 ± 6.21
			Median (Q1–Q3)	11 (10–12)	9 (8–10)	9 (8–10)	8 (7–9)	8 (8–10)	12 (11–14)	57 (53–62)
			Mann-Whitney U	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***
			Rank Biserial	***r* = .19 ****	***r* = .16 ****	***r* = .13 ****	***r* = .15 ****	***r* = .12 ****	***r* = .12 ****	***r* = .16 ****
Bi-/Multilingual										
Yes	530	27.4	*Mean ± SD*	11.91 ± 1.91	9.26 ± 0.99	8.87 ± 1.19	8.22 ± 1.36	8.73 ± 1.27	12.65 ± 1.81	59.64 ± 5.89
			Median (Q1–Q3)	12 (11–13)	10 (9–10)	9 (8–10)	8 (7–9)	9 (8–10)	13 (11–14)	60 (56–64)
No	1405	72.6	*Mean ± SD*	11.37 ± 1.97	9.06 ± 1.04	8.62 ± 1.20	7.79 ± 1.52	8.51 ± 1.26	12.25 ± 1.80	57.60 ± 6.18
			Median (Q1–Q3)	11 (10–13)	9 (8–10)	9 (8–10)	8 (7–9)	8 (8–10)	12 (11–14)	57 (53–62)
			Mann-Whitney U	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***

Group				**Intercultural Competence Score**						
	n	**%**		**TA**	**BF**	**CA**	**KD**	**RO**	**E**	**Total**
			Rank Biserial	***r* = .20 ****	***r* = .17 ****	***r* = .16 ****	***r* = .20 ****	***r* = .15 ****	***r* = .16 ****	***r* = .19 ****
Travel Abroad Experience										
Yes	464	24.0	*Mean ± SD* *Median (Q1–Q3)*	11.77 ± 1.97 12 (11–13)	9.22 ± 0.98 10 (9–10)	8.82 ± 1.14 9 (8–10)	8.16 ± 1.42 8 (7–9)	8.67 ± 1.24 9 (8–10)	12.55 ± 1.81 12 (11–14)	59.19 ± 5.98 59 (55–64)
No	1471	76.0	*Mean ± SD* *Median (Q1–Q3)*	11.44 ± 1.96 11 (10–13)	9.08 ± 1.05 9 (8–10)	8.64 ± 1.21 9 (8–10)	7.83 ± 1.50 8 (7–9)	8.54 ± 1.28 8 (8–10)	12.30 ± 1.81 12 (11–14)	57.83 ± 6.19 57 (54–63)
			Mann-Whitney U	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .000 ***	***p* = .001 ***	***p* = .001 ***	***p* = .000 ***
			Rank Biserial	***r* = .14 ****	***r* = .12 ****	***r* = .11 ****	***r* = .14 ****	***r* = .10 ****	***r* = .10 ****	***r* = .13 ****
Current/Previous Work Experience										
Yes	165	8.53	*Mean ± SD* *Median (Q1–Q3)*	11.78 ± 2.02 12 (10–13)	9.25 ± 1.03 10 (9–10)	8.85 ± 1.25 9 (8–10)	8.22 ± 1.47 8 (7–9)	8.65 ± 1.34 9 (8–10)	12.35 ± 2.00 12 (11–14)	59.11 ± 6.38 59 (54–65)
No	1770	91.5	*Mean ± SD* *Median (Q1–Q3)*	11.49 ± 1.96 12 (10–13)	9.10 ± 1.03 9 (8–10)	8.67 ± 1.19 9 (8–10)	7.88 ± 1.49 8 (7–9)	8.56 ± 1.26 8 (8–10)	12.36 ± 1.80 12 (11–14)	58.07 ± 6.14 58 (54–63)
			Mann-Whitney U	***p* = .035 ***	***p* = .012 ***	***p* = .026 ***	***p* = .006 ***	*p* = .076	*p* = .385	***p* = .047 ***
			Rank Biserial	***r* = .10 ****	***r* = .12 ****	***r* = .10 ****	***r* = .13 ****	*r* = .08	*r* = .04	*r* = .09
Total										
	1935		*Mean ± SD* *Median (Q1–Q3)*	11.52 ± 1.97 12 (10–13)	9.11 ± 1.03 9 (8–10)	8.69 ± 1.20 9 (8–10)	7.91 ± 1.49 8 (7–9)	8.57 ± 1.27 8 (8–10)	12.36 ± 1.81 12 (11–14)	58.15 ± 6.17 58 (54–63)
Note. * p < .05, ** small effect size										

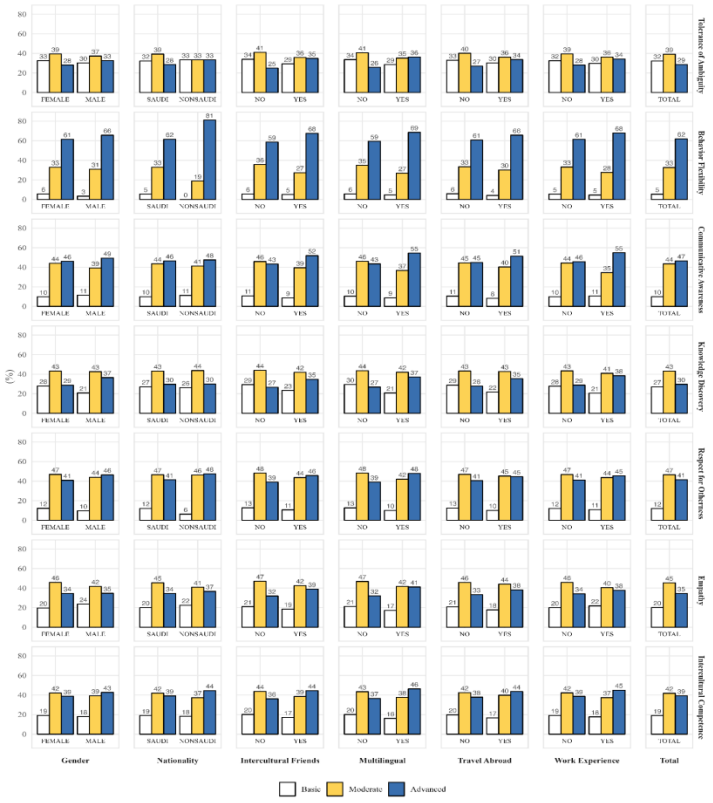

Figure 2

Frequency distribution of participant self-evaluations of intercultural competence, arranged by population category and competence type.

DISCUSSION

The findings of this study provide valuable insights into the self-reported levels of intercultural competence (IC) among Saudi college students, particularly in a region experiencing rapid globalization. The results indicate that most participants perceive their competence as moderate to advanced, with behavioral flexibility and respect for otherness emerging as the strongest dimensions. This aligns with previous research emphasizing the role of education, cultural exposure, and language proficiency in shaping IC (Deardorff, 2006; Fantini, 2000; Spitzberg& Changnon, 2009). However, while many studies focus on IC in Western or multicultural contexts, this study situates the discussion within Saudi Arabia's socio-economic transformations, highlighting the implications for its evolving workforce.

A key finding is the positive correlation between intercultural exposure and competence levels. Consistent with studies on study abroad programs (Vande Berg et al., 2009; Wilson et al., 2013), students with international friendships, multilingual abilities, and travel experience exhibited higher IC levels. This reinforces the argument that direct cultural interactions foster adaptability and intercultural awareness (Bagwe&Haskollar, 2020). However, contrary to some research suggesting higher IC among females (Solhaug & Kristensen, 2020), this study found minimal gender-based differences, with only the knowledge discovery dimension showing significance. Similarly, nationality did not significantly impact overall IC, which contrasts with studies indicating international students tend to have higher IC (Kruse et al., 2014). These discrepancies suggest that contextual factors, such as limited cultural diversity in daily interactions, may influence IC development differently in Saudi Arabia.

These findings underscore the need for Saudi universities to integrate structured intercultural learning into curricula. Research highlights the effectiveness of intercultural training in enhancing students' readiness for multicultural workplaces (Deardorff, 2006; Lantz-Deaton, 2017). Universities should consider initiatives such as virtual collaborations, cultural exchange programs, and multilingual education to bridge the gap in experiential learning. Additionally, organizations must recognize the role of IC in workplace success, as studies confirm that employees with strong intercultural skills contribute to improved teamwork and innovation (Cushner & Brislin, 2012; Stevens et al., 2014).

CONCLUSIONS

This study highlights key factors influencing intercultural competence among Saudi college students, reinforcing the importance of direct cultural exposure in shaping competence levels. The minimal impact of demographic factors suggests that IC development is more experience-driven than inherently tied to personal characteristics. As Saudi Arabia continues integrating into the global economy, universities and employers must prioritize IC training to enhance graduates' competitiveness. Future research should expand on these findings by employing diverse methodologies and investigating the role of digital globalization in intercultural competence.

Despite its contributions, this study has limitations. The reliance on self-reported measures may introduce response bias, and future research should incorporate behavioral assessments and qualitative methods (Deardorff, 2006; Matsumoto & Hwang, 2013). The cross-sectional nature of the study also limits causal conclusions, highlighting the need for longitudinal research. Expanding the sample beyond a single university would enhance generalizability. Furthermore, given the increasing role of digital interactions in shaping cultural understanding, future studies should explore how online communication influences IC development (Punti& Dingel, 2021).

ACKNOWLEDGEMENTS

The authors extend their appreciation to the Deanship of Research and Graduate Studies at the University of Tabuk for funding this work through Research no. (S-1441-0149).

REFERENCES

Abumelha, M. (2023). Strategy use, cultural intelligence, and English language proficiency of undergraduate Saudi students. *Arab World English Journal, 14*(2), 30–47. DOI:10.24093/awej/vol14no2.3.

Alharbi, M., Alhamlan, M., &Aboshaiqah, A. (2021). Cultural competency among pediatric registered nurses in Saudi Arabia: A cross-sectional design. *Journal of Transcultural Nursing, 32*(5), 567–574. DOI:10.1177/1043659620960781.

Ang, S., Van Dyne, L., Koh, C., Ng, K., Templer, K., Tay, C., & Chandrasekar, N. (2007). Cultural Intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation and task performance. *Management and Organization Review, 3*(3), 335–371. DOI:10.1111/j.1740-8784.2007.00082.x.

Arasaratnam, L. A. (2006). Further Testing of a New Model of Intercultural Communication Competence. *Communication Research Reports, 23*(1), 93–99. DOI:10.1080/08824090600668923.

Atwa, H. S. M., & Abdel Nasser, A. (2016). Physicians' self-assessment in intercultural clinical communication in Jeddah, Saudi Arabia: A pilot study. *Education in Medicine Journal, 8*(2), 15–26. DOI:10.5959/eimj.v8i2.415.

Bacon, D., Sauer, P., & Young, M. (1995). Composite reliability in structural equations modeling. Educational and Psychological Measurement, 55(3), 394-406. DOI:10.1177/0013164495055003003.

Bagwe, T. K., &Haskollar, E. (2020). Variables Impacting Intercultural Competence: A

Systematic Literature Review. *Journal of Intercultural Communication Research, 49*(5), 346–371. DOI:10.1080/17475759.2020.1771751.

Basow, S., & Gaugler, T. (2017). Predicting adjustment of U.S. college students studying abroad: Beyond the multicultural personality. *International Journal of Intercultural Relations, 56*, 39–51. DOI:10.1016/J.IJINTREL.2016.12.001.

Bhawuk, D., & Brislin, R. (1992). The measurement of intercultural sensitivity using the concepts of individualism and collectivism. *International Journal of Intercultural Relations, 16*(4), 413–436. DOI:10.1016/0147-1767(92)90031-O.

Biggs, J. &Madnani, N. (2022). *FactorAnalyzer* (Version 0.4.1) [Software]. Educational Testing Service. Available at: https://github.com/EducationalTestingService/factor_analyzer/

Byram, M. (1997). *Teaching and Assessing Intercultural Communicative Competence*. Clevedon: Multilingual Matters.

Byram, M. (2009). Intercultural Competence in foreign languages: The intercultural speaker and the pedagogy of foreign language education. In D. K. Deardorff (Ed.), *The Sage Handbook of Intercultural Competence* (pp. 321–332). Thousand Oaks, CA: Sage. DOI:10.4135/9781071872987.

Castles, J. F. (2012). *Intercultural competence in a cohort of freshman at a faith-based institution in the Southwest United States* [Doctoral dissertation, ProQuest Dissertation Publishing]. (3514802).

Chen, G. M., & Starosta, W. J. (2000). The development and validation of the intercultural sensitivity scale. *Human Communication, 3*(1), 3–14. Retrieved from https://digitalcommons.uri.edu/com_facpubs/36/.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge.

Cruz, J., Alquwez, N., Cruz, C., Felicilda-Reynaldo, R., Vitorino, L., & Islam, S. (2017). Cultural competence among nursing students in Saudi Arabia: A cross-sectional study. *International Nursing Review, 64*(2), 1–9. DOI:10.1111/inr.12370.

Cureton, E. E. (1956). Rank-biserial correlation. *Psychometrika, 21*(3), 287–290. DOI:10.1007/BF02289138

Curran, P. J., West, S. G., & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods, 1*(1), 16–29. DOI:10.1037/1082-989X.1.1.16

Cushner, K., & Brislin, R. (2012). Intercultural Interactions: A Practical Guide. DOI:10.4135/9781452204970

Dancey, C., & Reidy, J. (2004). *Statistics without maths for psychology: using SPSS for windows.* London: Prentice Hall.

de Waal, M. S., Boendermaker, L., & Tromp, N. (2020). Third culture kids, diversity beliefs, and intercultural competences: Early cross-cultural life experiences and positive diversity beliefs. *Journal of Global Mobility, 8*(2), 213–231. DOI:10.1016/j.ijintrel.2020.09.002.

Deardorff, D. (2006). Identification and Assessment of Intercultural Competence as a Student Outcome of Internationalization. *Journal of Studies in International Education, 10*(3), 241–266. DOI:10.1177/1028315306287002.

El Ganzoury, H. A. (2012). *Assessing intercultural competence for educational leaders: An empirical investigation* [Doctoral dissertation, ProQuest Dissertation Publishing]. (3513327).

Fantini, A. (2000). A central concern: Developing intercultural competence. In A. E. Fantini (Ed.), *SIT Occasional Papers Series* (pp. 25–42). Brattleboro, VT: School for International Training. Retrieved from https://digitalcollections.sit.edu/sop/4.

Fantini, A. (2007). *Exploring and assessing intercultural competence* (CSD Research Paper No. 07–01). Washington University, Center for Social Development. DOI:10.7936/K7TB16CX.

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage Publications Ltd.

Genç, G. (2018). Are Turkish EFL pre-service teachers ready to manage intercultural challenges? *Intercultural Education, 29*(2), 185–202. DOI:10.1080/14675986.2018.1429790.

Gerbing, D., & Hamilton, J. (1996). Viability of exploratory factor analysis as a precursor to confirmatory factor analysis. Structural Equation Modeling, 3(1), 62-72. DOI:10.1080/10705519609540030.

Gonçalves Matos, A. (2005). Literary texts: A passage to intercultural reading in foreign language education. *Language and Intercultural Communication, 5*(1), 57–71. DOI:10.1080/14708470508668883.

Güvendir, M., A. & Ozkan, Y. O. (2022). Item removal strategies conducted in exploratory factor analysis: A comparative study. *International Journal of Assessment Tools in Education, 9*(1), 165–180. DOI:10.21449/ijate.827950.

Halabi, J., & de Beer, J. (2018). Exploring the cultural competence of undergraduate nursing students in Saudi Arabia. *Nurse Education Today, 62*, 9–15. 10.1016/j.nedt.2017.12.005.

Hammer, M., Bennett, M., & Wiseman, R. (2003). Measuring intercultural sensitivity: The intercultural development inventory. *International Journal of Intercultural Relations, 27*(4), 421–443. DOI:10.1016/S0147-1767(03)00032-4.

Haskollar, E., &Bagwe, T. K. (2022). Do Demographics Matter? The Relationship between Student Characteristics and Intercultural Competence. *Journal of Intercultural Communication Research, 52*(1), 25–55. DOI:10.1080/17475759.2022.2102059.

Havril, Á. (2018). Academic challenges of Saudi university females and their implications for intercultural competence. *Corvinus Journal of Sociology and Social Policy, 9*(1), 151–176. DOI:10.14267/CJSSP.2018.1.07.

Herrera Granda, A., Yepes, S.M., Montes Granada, W.F., & Alvarez Salazar, J. (2023). Students' self-perception of social, emotional, and intercultural competences in a public higher education institution in Colombia. *Journal for Multicultural Education, 17*(1), 70–82. DOI:10.1108/JME-02-2022-0032

Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrica, 30*(2), 179–185. DOI:10.1007/BF02289447.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55.

INCA Project Team. (2004). *INCA Assessee Manual*. Leonardo da Vinci VII Project. Retrieved 13 October 2023 from https://ec.europa.eu/migrant-integration/sites/default/files/2009-08/docl_9372_146280285.pdf

Jorgensen, T. D., Pornprasertmanit, S., Schoemann, A. M., & Rosseel, Y. (2024).*semTools: Useful tools for structural equation modeling*. R package version 0.5-6. Retrieved from https://CRAN.R-project.org/package=semTools.

Kline, P. (1999). *The handbook of psychological testing* (2nd ed.). London: Routledge.

Kruse, J. A., Didion, J., &Perzynski, K. (2014). Utilizing the Intercultural Development Inventory® to develop intercultural competence. *SpringerPlus, 3*(1), 1–8. DOI:10.1186/2193-1801-3-334.

Kühlmann, T., & Stahl, G. (1998). Diagnose interkulturellerKompetenz: Entwicklung und Evaluierungeines Assessment-Centers [Diagnosing intercultural competence: Development and evaluation of an assessment centre]. In C. Barmeyer& J. Bolten (Eds.), *InterkulturellePersonalorganisation* [Intercultural Personnel Management] (pp. 213-224). Sternenfels: Verlag für Wissenschaft und Praxis.

Lantz-Deaton, C. (2017). Internationalisation and the development of students' intercultural competence. *Teaching in Higher Education, 22*(5), 532–550. DOI:10.1080/13562517.2016.1273209.

Lokkesmoe, K. J., Kuchinke, K. P., &Ardichvili, A. (2016). Developing cross-cultural awareness through foreign immersion programs: Implications of university study abroad research for global competency development. *European Journal of Training and Development, 40*(3), 155–170. DOI:10.1108/EJTD-07-2014-0048.

Matsumoto, D., & Hwang, H. (2013). Assessing Cross-Cultural Competence: A Review of Available Tests. *Journal of Cross-Cultural Psychology, 44*(6), 849–873. DOI:10.1177/0022022113492891.

Palsa, M. M. (2010). *The intercultural development of aspiring leaders at Texas A&M University* [Doctoral dissertation, ProQuest Dissertations Publishing]. (3436871).

Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2003). *Making sense of factor analysis: The use of factor analysis for instrument development in health care research.* SAGE. DOI:10.4135/9781412984898.

Prechtl, E., & Lund, A. (2007). Intercultural competence and assessment: Perspectives from the INCA project. In K. Knapp & G. Antos (Eds.), *Handbook of Intercultural Communication* (Vol. 7, pp. 467–490). Deutsche Nationalbibliothek.

Portalla, T., & Chen, G. M. (2010). The development and validation of the intercultural effectiveness scale. *Intercultural Communication Studies, 19*(3), 21–37. Retrieved from https://www.kent.edu/stark/ics-2010-vol-19-no-3.

Punti, G., & Dingel, M. (2021). Rethinking race, ethnicity, and the assessment of intercultural competence in higher education. *Education Sciences, 11*(3), 1–17. DOI:10.3390/educsci11030110.

Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modeling* (2nd ed.). Lawrence Erlbaum Associates Publishers.

Schwarzenthal, M., Juang, L., Schachner, M., & van de Vijver, F. (2019). "When birds of a different feather flock together" – Intercultural socialization in adolescents' friendships. *International Journal of Intercultural Relations, 72*, 61–75. DOI:10.1016/j.ijintrel.2019.07.001.

Searle, W., & Ward, C. (1990). The prediction of psychological and sociocultural adjustment during cross-cultural transitions. *International Journal of Intercultural Relations, 14*(4), 449–464. DOI:10.1016/0147-1767(90)90030-Z.

Sercu, L. (2004). Assessing intercultural competence: A framework for systematic test development in foreign language education and beyond. *Intercultural Education, 15*(1), 73–89. DOI:10.1080/1467598042000190004.

Sinicrope, C., Norris, J., & Watanabe, Y. (2007). Understanding and assessing intercultural competence: a summary of theory, research, and practice. *Second Language Studies, 26*, 1–58. Retrieved from https://www.hawaii.edu/sls/wp-content/uploads/2014/09/Norris.pdf.

Solhaug, T., & Kristensen, N. (2020). Gender and intercultural competence: Analysis of intercultural competence among upper secondary school students in Denmark and Norway. *Educational Psychology, 40*(1), 120–140. DOI:10.1080/01443410.2019.1646410.

Stevens, M. J., Bird, A., Mendenhall, M. E., &Oddou, G. (2014). Measuring Global Leader Intercultural Competency: Development and Validation of the Global Competencies Inventory (GCI). In *Advances in Global Leadership* (Vol. 8, pp. 115–154). Emerald Group Publishing Limited. DOI:10.1108/s1535-120320140000008014.

Swami, V., Arteche, A., Chamorro-Premuzic, T., & Furnham, A. (2010). Sociocultural adjustment among sojourning Malaysian students in Britain: a replication and path analytic extension. *Social Psychiatry and Psychiatric Epidemiology, 45*(1), 57–65. DOI:10.1007/s00127-009-0042-4.

Spitzberg, B. H. (2000). A model of intercultural communication competence. In L. A. Samovar & R. E. Porter (Eds.), *Intercultural communication: A reader* (9th ed., pp. 375–387). Cengage Learning.

Spitzberg, B. H., & Changnon, G. (2009). Conceptualizing intercultural competence. In D. K. Deardorff (Ed.), *The Sage handbook of intercultural competence* (pp. 2–52). Los Angeles: Sage.

Steuernagel, J. A. (2014). *Factors that contribute to intercultural sensitivity of school counselors in international schools: A path analysis* [Doctoral dissertation, ProQuest Dissertations Publishing]. (3667757).

Streiner, D. L. (1994). Figuring out factors: The use and misuse of factor analysis. *Canadian Journal of Psychiatry, 39*(3), 135–140. DOI:10.1177/070674379403900303.

Revelle, W. (2024). *psych: Procedures for Psychological, Psychometric, and Personality Research* (Version 2.4.1) [Computer software]. https://CRAN.R-project.org/package=psych.

Richter, N., Schlaegel, C., Taras, V., Alon, I., & Bird, A. (2023). Reviewing half a century of measuring cross-cultural competence: Aligning theoretical constructs and empirical measures. *International Business Review, 32*(4), 1–34. DOI:10.1016/j.ibusrev.2023.102122.

Rosseel, Y. (2012). lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software, 48*(2), 1-36. DOI:10.18637/jss.v048.i02.

Vande Berg, M., Connor-Linton, J., & Paige, R. M. (2009). The Georgetown consortium project: Interventions for student learning abroad. *Frontiers: The Interdisciplinary Journal of Study Abroad, 18*, 1–75. DOI:10.36366/frontiers.v18i1.251

Wilson, J., Ward, C., & Fischer, R. (2013). Beyond Culture Learning Theory: What Can Personality Tell Us About Cultural Competence? *Journal of Cross-Cultural Psychology, 44*(6), 900–927. DOI:10.1177/0022022113492889.

Appendix A. Intercultural Competence Self-Evaluation Scales.

ITEM	MEAN	SD
Tolerance of Ambiguity (TA):	**11.52**	**1.97**
1. I tolerate non-sensitive cultural differences that arise when dealing with professors and classmates from other cultures. (Basic)	4.33	0.70
2. I am comfortable discussing a group project with professors and classmates from other cultures even if I am not sure how to respond to everything they say. (Intermediate)	3.87	0.93
3. I can deal with unclear situations even if they are related to culturally sensitive issues such as religion or politics. (Full)	3.32	1.08
Behavior Flexibility (BF):	**13.47**	**1.44**
4. I learn from working with professors and classmates from other cultures how to effectively deal with people from other cultures in the future. (Basic)	4.36	0.64
5. When my professors or classmates from other cultures expect punctuality with submission deadlines, I adopt their punctuality habits. (Intermediate)	4.44	0.68
6. When dealing with professors or classmates from other cultures, I avoid behaviors that could be offenses in their own cultures. (Full)	4.68	0.54
Communicative Awareness (CA):	**12.46**	**1.68**
7. I know that my professors and classmates from other cultures may communicate verbally and non-verbally in ways I'm not familiar with. (Basic)	3.77	0.91
8. In conversations with speakers of other languages I avoid unclear or ambiguous words. (Intermediate)	4.33	0.76
9. I use different strategies to avoid miscommunication and resolve misunderstanding when dealing with professors and classmates from other cultures. (Full)	4.36	0.68
Knowledge Discovery (KD):	**11.93**	**1.93**
10. When people from other cultures behave in a way that I don't understand, I look for information why they are doing this. (Basic)	4.02	0.82
11. I often seek contact with other people in order to learn as much as possible about their culture. (Intermediate)	3.85	0.96
12. I am able to successfully deal with people from other cultures through principles and knowledge learned in past encounters and research. (Full)	4.06	0.80
Respect for Otherness (RO):	**13.11**	**1.67**

13. I try not to jump to conclusions about unfamiliar behaviors of professors and classmates from other cultures. (Basic)	4.28	0.69
14. I don't hastily judge cultural differences in my interaction with professors and classmates as good or bad. (Intermediate)	4.29	0.71
15. I fully understand and respect the right of those from other cultures to have different values from my own. (Full)	4.54	0.60
Empathy (E):	**12.36**	**1.81**
16. I try to accept culturally different behaviors that may seem strange to me. (Basic)	4.11	0.82
17. I use my understanding of the concerns and the perspectives of professors and classmates from other cultures to put them at ease and avoid upsetting them. (Intermediate)	4.23	0.69
18. When there are classmates in my class who come from an ethnic minority, I try to involve them in the majority group. (Full)	4.01	0.82

Appendix B. Correlations Among the Summed Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Intercultural Competence	1											
2. Tolerance of Ambiguity	0.69***	1										
3. Behavior Flexibility	0.71***	0.42***	1									
4. Communicative Awareness	0.7***	0.34***	0.48***	1								
5. Knowledge Discovery	0.74***	0.4***	0.43***	0.44***	1							
6. Respect for Otherness	0.76***	0.39***	0.52***	0.45***	0.49***	1						
7. Empathy	0.77***	0.45***	0.44***	0.47***	0.49***	0.59***	1					
8. Sex (Male = 0, Female = 1)	-0.03	-0.04	-0.03	-0.02	-0.06*	-0.02	0.02	1				
9. Nationality (Saudi = 0, Non-Saudi = 1)	0.02	0	0.06**	0.02	-0.01	0.02	0	0.01	1			
10. Has Non-Saudi Friends (No = 0, Yes = 1)	0.15***	0.15***	0.12***	0.11***	0.11***	0.09***	0.08***	-0.02	0.16***	1		
11. Speak More than One Language (No = 0, Yes = 1)	0.15***	0.12***	0.12***	0.08***	0.13***	0.10***	0.10***	-0.03	0.03	0.25***	1	
12. Has Traveled Abroad (No = 0, Yes = 1)	0.10***	0.08***	0.07**	0.07**	0.08***	0.06**	0.06**	-0.06**	0.02	0.16***	0.08***	1

Note. * p < .05. ** p < .01. *** p < .